

System 550 Multi-Stage Controller with A2L Refrigerant Leak Detection, Mitigation, and Optional Cloud Connectivity

New Product Release

October 4, 2024
LIT-12001477

☑ Building Solutions: North America ☑ Independent Distribution Channel ☑ Original Equipment Manufacturers

Introducing the System 550



Overview

The PENN System 550 is the first commercially available controller that combines temperature, humidity, and pressure control with A2L refrigerant leak detection and mitigation and optional cloud-based connectivity. The System 550 is designed for versatility. Customers can mix and match control and expansion modules with relay outputs, analog outputs, or both, to meet their application needs.

The System 550 provides single or multi-stage on/off, proportional or proportional plus integral control. Customers can plug in relay expansion modules and analog expansion modules to increase the number of outputs up to ten outputs.

A2L refrigerant leak detection and mitigation

For A2L refrigerant leak detection and mitigation, use the C550CCN control module. PENN GM200 series A2L refrigerant leak detection sensors use speed of sound technology, the fastest response time on the market, to sense refrigerant leaks in less than seven seconds (T25)

Reasons to buy

- **Plug-and-play A2L refrigerant leak detection and mitigation**
Customers can meet new regulatory requirements with confidence.
- **Cost-effective multi-stage modular electronic control**
Use up to three temperature, humidity, or pressure sensors in any combination.
Mix and match relay and analog expansion modules to meet your application needs.
- **Optional Controls System Cloud connectivity**
Remotely monitor HVACR system health from anywhere in the world to minimize downtime.

The power behind **your mission**



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and warm up in less than five seconds, to comply with international standards. Additionally, the A2L refrigerant sensors communicate with the C550CCN control module through Modbus, which provides valuable information to service personnel and reduces troubleshooting time.

Controls System Cloud

All System 550 control modules include the option to connect to the Johnson Controls two-way Controls System Cloud platform through an annual subscription. Through the cloud dashboard, service technicians can remotely change C550 control configurations and monitor HVACR system performance. With system alarms through the cloud, technicians can save time by arriving on site informed and ready to act. Building owners save time and money by avoiding potential product loss. This is especially important for A2L HVACR systems where service technicians want to know in real time if there is a refrigerant leak or A2L refrigerant sensor failure. Users can configure Controls System Cloud to display all System 550 devices by location or enterprise, which they can use to quickly determine if equipment is operating correctly. Service companies can use data available in the cloud to determine if they need to dispatch a technician.

Multi-stage controller

- Control temperature, humidity, and pressure while complying with the newest A2L refrigerant leak detection and mitigation regulations.
- Connect up to three temperature, humidity, and pressure sensors in any combination
- Mix and match up to ten relay or analog outputs in any combination.
- Due to the System 550's modular design, only purchase the modules that you need to support your unique application.

User-friendly and intuitive

- Simplified menu: Easily configure a C550 control module.
- Full-character display: Customize the names of sensors and relay or analog outputs.
- Quick-access feature: Quickly review and change setpoint values from the idle screen.
- USB-C port: Transfer and save configuration files through USB, without the need to separately power the device.

A2L refrigerant leak detection and mitigation

- Confidently meet regulation deadlines with a plug-and-play A2L refrigerant leak sensing and mitigation control solution.
- Easily identify which sensor detected a refrigerant leak or a sensor fault with the GM200 series A2L refrigerant sensors that communicate with the C550CCN control module through Modbus.
- The C550CCN control module supports up to 6 A2L refrigerant sensors.
- Receive A2L sensor end-of-life notifications, to prevent unnecessary system downtime.

Controls System Cloud

- Remotely monitor HVACR system health from anywhere in the world, with the optional Controls System Cloud two-way cloud connectivity.
- Change menu settings and review or download trend data to assist with troubleshooting.
- Use system data to prioritize and potentially eliminate the need for some service calls.
- Use trend data to identify system-related issues, to reduce the need for maintenance tasks.
- Controls System Cloud operates under industry standard cybersecurity protocols to significantly reduce cybersecurity risks. The Wi-Fi connection is securely established with Azure, a Microsoft® Cloud Solution.
- The System 550 does not route data from one network to another, which eliminates data leaks from the device to a Wi-Fi network.

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Backwards compatibility

System 550 modules are not backwards compatible with System 350 or System 450 modules.

Sales collateral

The following marketing materials are available:

- System 550 Brochure, 6 pages
- System 550 Sell Sheet, 3 pages
- System 550 promotional video, 3 minutes

Figure 1: Connected C550CCN control module, C550YNN power module, and C550SCN relay expansion module



Ordering information for the initial System 550 release

Product code	Description	List price per unit, USD
C550CCN-001C	System 550 control module, three sensor inputs, two relay outputs, 0-10 VDC output, A2L refrigeration leak sensing and mitigation, optional wireless connectivity, individual pack	\$587.06
C550CCN-001D	System 550 control module, three sensor inputs, two relay outputs, 0-10 VDC output, A2L refrigeration leak sensing and mitigation, optional wireless connectivity, bulk pack: quantity 16	\$563.58
C550CQN-001C	System 550 control module, three sensor inputs, two analog outputs, optional wireless connectivity, individual pack	\$565.19
C550CQN-001D	System 550 control module, three sensor inputs, two analog outputs, optional wireless connectivity, bulk pack: quantity 16	\$542.58
C550SCN-1C	System 550 expansion module, two relay outputs, individual pack	\$376.84
C550SCN-1D	System 550 expansion module, two relay outputs, bulk pack: quantity 16	\$361.76
C550SQN-1C	System 550 expansion module, two analog outputs, individual pack	\$385.21
C550SQN-1D	System 550 expansion module, two analog outputs, bulk pack: quantity 16	\$369.80

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Ordering information for the initial System 550 release

Product code	Description	List price per unit, USD
C550YNN-1C	System 550 power module, converts 120 VAC, 208/240 VAC to 24 V, individual pack	\$154.43
C550YNN-1D	System 550 power module, converts 120 VAC, 208/240 VAC to 24 V, bulk pack: quantity 16	\$148.26
GM200-MH00C	A2L refrigeration sensor, R32, RS485 Modbus output, 24 V, 2 ft cable with male Connector, individual pack	\$442.19
GM200-MH00D	A2L refrigeration sensor, R32, RS485 Modbus output, 24 V, 2 ft cable with male Connector, bulk pack: quantity 48	\$428.69
GM202-MH00C	A2L refrigeration sensor, R454B, RS485 Modbus output, 24 V, 2 ft cable with male Connector, individual pack	\$442.19
GM202-MH00D	A2L refrigeration sensor, R454B, RS485 Modbus output, 24 V, 2 ft cable with male Connector, bulk pack: quantity 48	\$428.69
GM203-MH00C	A2L refrigeration sensor, R454C, RS485 Modbus output, 24 V, 2 ft cable with male Connector, individual pack	\$442.19
GM203-MH00D	A2L refrigeration sensor, R454C, RS485 Modbus output, 24 V, 2 ft cable with male Connector, bulk pack: quantity 48	\$428.69
GM204-MH00C	A2L refrigeration sensor, R454A, RS485 Modbus output, 24 V, 2 ft cable with male Connector, individual pack	\$442.19
GM204-MH00D	A2L refrigeration sensor, R454A, RS485 Modbus output, 24 V, 2 ft cable with male Connector, bulk pack: quantity 48	\$428.69
GM210-MH00C	A2L refrigeration sensor, R455A, RS485 Modbus output, 24 V, 2 ft cable with male Connector, individual pack	\$442.19
GM210-MH00D	A2L refrigeration sensor, R455A, RS485 Modbus output, 24 V, 2 ft cable with male Connector, bulk pack: quantity 48	\$428.69
WHA-GM2-03C	A2L refrigerant sensor extension cable: 3 m (10 ft) cable, individual pack	\$152.38
WHA-GM2-03D	A2L refrigerant sensor extension cable: 3 m (10 ft) cable, bulk pack: quantity 48	\$138.53
WHA-GM2-05C	A2L refrigerant sensor extension cable: 5 m (16.4 ft) cable, individual pack	\$201.99
WHA-GM2-05D	A2L refrigerant sensor extension cable: 5 m (16.4 ft) cable, bulk pack: quantity 24	\$183.63
WHA-GM2-08C	A2L refrigerant sensor extension cable: 8 m (26.2 ft) cable, individual pack	\$295.26
WHA-GM2-08D	A2L refrigerant sensor extension cable: 8 m (26.2 ft) cable, bulk pack: quantity 16	\$268.42

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Documentation

Document title	Document number
System 550 User Guide	LIT-12014465
GM200 Series A2L Refrigerant Leak Detection Sensor User Guide	LIT-12014477
C550CCN System 550 Relay Control Module with A2L Leak Detection and Mitigation Quick Start Guide	A16382GM7H
C550CQN System 550 Analog Control Module Quick Start Guide	A16382GM7J
GM200 Series A2L Refrigerant Leak Detection Sensors Quick Start Guide	A16382KDHJ
C550CCN and C550CQN System 550 Control Module Catalog Page	LIT-19011228

Note: The GM200 Series A2L Series Refrigerant Sensors Catalog Page will be available on Knowledge Exchange at a later date.

Release schedule

- Orderable date: October 4, **2024**
- Shipping date: November 4, **2024**
- Sales documentation on [Knowledge Exchange](#): October 4, 2024
- Technical documentation on [Knowledge Exchange](#): October 4, 2024

For further information, contact:

Keith Gifford
Global Product Manager, PENN Products
email: keith.h.gifford@jci.com
phone: 810.299.1109

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